ABSTRACT

[0048] An imager in which two adjacent pixels share row and reset lines and a row selection circuitry while the output transistors of the two pixels are configured as a differential amplifier. In operation, both pixels are reset at the same time, causing differential reset signals to be output from the amplifier. The charge from the first pixel is readout and a differential pixel signal for the first pixel is output from the amplifier. Because the reset and pixel signals are differential signals generated within the pixels, they are free from common-mode noise. Correlated double sampling can be used to obtain the pixel output value, which is also free from common-mode noise, from the differential reset and pixel signals. The second pixel may be readout in the same manner. Because the two pixels are sharing circuitry, the pixels have decreased fill factor and complexity as well.